Récit de la Grande Expérience de l'Equilibre des Liqueurs. By Blaise Pascal. (Berlin: A. Asher and Co., 1893.)

THIS work forms No. 2 of the new series of publications of old books relating to meteorology and terrestrial magnetism, issued in facsimile by Prof. G. Hellmann, and was first printed in Paris in 1648. There is no copy of the work in the British Museum, and Dr. Hellmann has only been able to trace three copies, two of which are in Paris, and one in Breslau. This little work is of the greatest importance to the history of physics, to meteorology, and physical geography; it gives the first conclusive proof of the pressure of the atmosphere, and puts an end to the doctrine of the *horror vacui*. This famous experiment was made at Clermont Ferrand, and on the Puy de Dôme, on September 19, 1648, so that Pascal lost no time in making his discovery public, but it is not generally known that any account had been issued prior to the publication of the *Traitez de l'Equilibre*, printed in 1663. The work is prefaced by an interesting introduction by Prof. Hellmann, in which he refers to the doubt which exists whether the idea of the experiment was taken from Descartes. The latter has expressly asserted this to be the case, in two letters (dated June 11 and August 17, 1649), addressed to Carcavi, and the fact that Pascal never replied in any way to the letters in question, has induced many writers to adopt this view.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

The Organisation of Scientific Literature.

I HAVE followed the correspondence in your columns on the question of the organisation of scientific literature with very keen interest, and should esteem it a favour to be allowed to add a few remarks to what has been said. There are two ways in which the present disorganisation might be dealt with. The first is exemplified in Prof. Bonney's "Year-book of Science"; that is to attempt to provide a key to the present complex state of affairs in the form of yearly abstracts. But even supposing this year-book (invaluable as it is) were comprehensive, which it admittedly is not, of what use would it be to the many workers who have neither the time nor the opportunity to spend hours in first-class libraries, nor the means to buy even a tolerable number of the innumerable magazines, journals, reports, &c., dealing with their special subject.

This infinite multiplicity of publication is the root of all the evil, and "Free Lance" strikes at it hard and well in his pamphlet on the organisation of science.

This brings us to the second method. As pointed out by "Free Lance," the only true solution of the difficulty is that in each country each subdivision of science should have its one central and accredited journal in which all papers on that subject worthy of publication should be published. In fact, a centralisation of publishing, with as much decentralisation of scientific meeting as the intellectual wants of the country may need.

Were this condition of things realised, then by consulting one or two journals in each country a specialist might easily, and comparatively cheaply, keep himself abreast of current work. In addition, an annual index or indexes of the books published in the various departments of science and in various countries, would render very great service.

Briefly, and in conclusion, my view of an ideal organisation of scientific literature is somewhat as follows:—

(1) In each country one central and accredited journal for each branch or subdivision of science.

(2) An international bureau working somewhat as follows:—(*a*) In each country the (α) papers (β) books and pamphlets, published in that country to be abstracted or indexed by well-paid men. (*b*) The several countries to exchange abstracts. (*c*) Finally, each country to translate the other abstracts and indexes into its own language, and publish these along with its own abstracts in, say, quarterly or monthly volumes, classified and subdivided for each science and branch of science.

In the case of such an international bureau proving impracticable, then each journal might abstract the work done in its department in other countries, after the admirable manner of the Chemical Society.

It is to be hoped that the British Association this year will take up the question seriously and in its widest aspect. There is no use organising one portion of science and leaving the remainder in disorder. F. G. DONNAN.

Ardmore Terrace, Holywood, Co. Down, August 28.

SEVERAL of your correspondents have called attention to the importance of distributing copies of papers in quarters where they are likely to be read. It may therefore be well to emphasise the fact that the *Philosophical Magazine* refuses to supply *gratuitous* copies. When this fact is appreciated, I think most persons will see that it is rather an unbusinesslike proceeding to pay the *Philosophical Magazine* for separate copies, when they can be obtained for nothing by communicating the paper to a society.

The "full publication of . . . papers of the societies, &c.," as recommended by Mr. Trotter, would be an infringement of copyright, and would lead to the Physical Society becoming more closely acquainted with the mysteries of the Chancery Division than its members would probably desire.

The Physical Society is a young and precocious one, and, in conjunction with its partner, the *Philosophical Magazine*, would doubtless like to obtain a monopoly of all mathematical papers except those strictly denominated *pure*, which it does not care about. But its legitimate sphere of action is *experimental and applied science*, and if it shows a disposition to poach upon the preserves of its neighbours it cannot fail to excite hostility.

I do not see any objection to the word "physicist," the literal meaning of which is "naturalist"; but is not the word "scientific" more appropriate to this discussion than "physical"? A. B. BASSET.

Hotel de Russie, Ems, Germany, September 3.

Drought and Heat at Shirenewton Hall in 1893.

Rain.

Month.	1893.	Average.	Excess or defect in 1893.	Most rain in a day.	Number of rainy days in 1893.	Number of days with at least a quarter of an inch.
	Inches.	Inches.	Inches.	Inches		
March	0·4	2·7	−2·3	0·170	5	0
April	0·2	2·1	−1·9	0·091	4	0
May	2·6	3·1	−0·5	0·880	9	3
June	1·8	2·6	−0·8	1·010	10	1
July	2·9	3·7	−0·8	0·660	12	4
August (to 17th)	1·8	2·1	−0·3	0·660	8	2
Total	9·7	16·3	−6·3	1·010	48	10

Since March 1, 122 days without rain.

Heat in Shade, 1893.

Month.	Number of days the heat was above		
	60°	70°	80°
April	25	9	2
May	28	15	1
June	30	21	6
July	31	21	5
August (to 17th) ...	17	17	8

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Temperature, 80° and above.

Month.		°	Month.		°
April	20	82·8	July	3	83·5
,,	21	82·2	,,	6	83·5
May	12	80·0	,,	7	90·7
June	13	80·4	Aug.	9	86·7
,,	15	82·8	,,	10	83·0
,,	16	82·0	,,	12	80·0
,,	17	84·3	,,	13	86·0
,,	18	83·8	,,	14	86·5
,,	19	88·9	,,	15	88·5
July	1	86·0	,,	16	83·6
,,	2	88·0	,,	17	86·0

Most of the rain fell in thunderstorms, but their area was very limited; the amount in that of June 15 within 5 miles of this place is an example:—

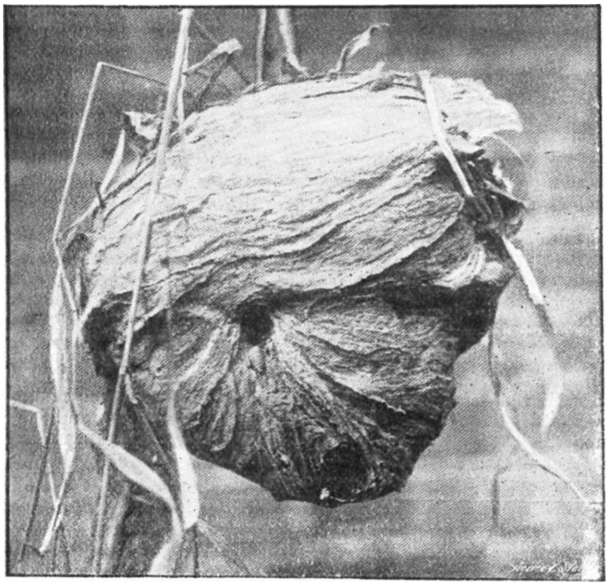
Caldicot Hall	0·04	Itton Court	1·50
Dennel Hill	0·17	Piercefield Park	1·79
Wirewoods Green	0·56	The Mount, Chepstow	1·96
Shirenewton Hall	1·01		

		in.		in.
The rainfall in	May	was 2·6;	of this	2·4 fell from 15th to 20th.
,,	June	,, 1·8	,,	1·0 fell on 15th.
,,	July	,, 2·9	,,	1·1 fell from 10th to 15th, and 1·0 on 18th and 19th.
,,	Aug. (to 17th)	,, 1·8	,,	1·0 fell on 1st to 3rd, and 0·6 on 10th.

Thus, of the total rainfall (9·7), 7·1 inches fell on 17½ days out of the 170 days. On August 9 there was no rain, but more lightning than I had seen since the memorable storm of August 9, 1843. It commenced at 9 p.m. and lasted five hours. From very frequent counting there could not be less than 10,000 flashes (the estimate was 11,540). For three hours the most number of flashes in a minute was 121, and the least 39. Before the storm of June 15 the ground was dry to the depth of 15 inches, and this 1 inch of rain only penetrated 2 inches. The long intervals of drought have parched the ground, so that we are still suffering from want of rain.

The Drought and Heat of 1893.

The results of an unusual occurrence like the present season show as clearly as instrumental observations the exceptional character. We have a very near copy of the drought of 1868–1870; *i.e.* Monmouthshire is repeating what in 1868–70 occurred in Nottinghamshire. Flowers and fruit have been a month earlier than usual, their period has been of short duration, and insect pests have been very great. There has been an extraordinary abundance of apples, pears, plums, cherries, gooseberries, currants, field mushrooms, butterflies, moths, flies, caterpillars, cuckoo-spit aphis, slugs, and wasps. The tree-wasp, which is rare, has had many nests, and, as the structure is not generally known, my son has taken the enclosed photograph, which clearly shows it. The tree-wasp's nest is built much earlier than that of the ordinary wasp, and equally large, a low bush being the situation usually selected. Nightingales and cuckoos have been very numerous. Grass is now being mown for hay, and four to five acres will only yield a ton, whilst the straw of corn is shorter than ever before known. Trees are also very bare of leaves. Water is scarce, as many springs have been dry for some weeks. In June the trees and shrubs were as if varnished from extensive honeydew, which the thunderstorm cleared away. Strawberries are blooming a second time, and there are many plants seeding that do not usually seed here.



E. J. LOWE.

Some Recent Restorations of Dinosaurs.

UNDER the above title, an illustrated article, by Mr. R. Lydekker, appears in NATURE, July 27, 1893, p. 302. This purports to give a summary of what has recently been done in restoring certain remarkable forms of extinct reptiles. Most of the statements made are correct, but with them are a number of serious errors that may mislead readers not familiar with the subject. As the restorations given are, with one exception, my own, and represent indirectly several years' work in the field and museum, I trust you will allow me to call attention to some mistakes in this article, which were perhaps made by Mr. Lydekker through inadvertence, or from his not having seen the specimens described.

In the introduction, the date 1878 is given for the first of my memoirs on Jurassic Dinosaurs; whereas in the previous year I described (1) the earliest of the huge Sauropoda found in America, proposing the family name Atlantosauridæ for the genera Atlantosaurus and Apatosaurus; (2) various carnivorous Dinosaurs of the present order Theropoda, including the genera Allosaurus and Dryptosaurus; (3) the Stegosauria, represented by Stegosaurus, the first American genus of the group; and (4) several small forms of true Ornithopoda, including Nanosaurus. The family Atlantosauridæ, the sub-order Stegosauria, and the genera here mentioned, were thus established by me in 1877 in the *American Journal of Science*, vol. xiv.; a small matter in itself, but the beginning of a long investigation.

The first restoration given by Mr. Lydekker, Fig. 1, is that of my *Brontosaurus excelsus*, reduced from an outline sketch published, as stated, in August, 1883; but no reason is assigned for not using, especially in a summary of recent work, my more complete restoration of 1891, which includes the results of much additional study. This figure represents a typical member of the order I have called Sauropoda, but in the text the name used is Sauropsida, a much more comprehensive term.

The second restoration, Fig. 2, called "A Carnivorous Dinosaur," is said to have been reproduced from my figures. This must be a mistake. It is evidently printed from one of my *clichés*, and is certainly used without authority. Moreover, the name I gave to the animal represented (*Ceratosaurus nasicornis*) is not even mentioned, but it is incidentally stated that my genus Ceratosaurus, based on this unique specimen, is inseparable from the European Megalosaurus. This statement could not be fairly made by anyone familiar with the type specimens of the two genera, or even with the literature. Only a few authentic remains of Megalosaurus are known, and I have studied all the important specimens with care. There is no evidence that the skulls are identical in the two forms, and much against it. The plano-concave cervical vertebræ of Ceratosaurus, unknown in any other Dinosaur, are radically different from the convexo-concave vertebræ of Megalosaurus. The complete co-ossification of all the pelvic elements of Ceratosaurus is another distinctive character, and the union of the metatarsals also is important. An elementary knowledge of the structure of Dinosaurs is quite sufficient to show any anatomist that the two belong to genera widely different, and to indicate for them distinct families. Additional remains, obtained since Ceratosaurus was described, have in great part removed the objection that the co-ossification mentioned may have been

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